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The Files

3 SEP 1957

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Project 2040, Signal Delay Device, Trip Report

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1. The writer visited the [REDACTED], in [REDACTED], on 23 August 1957 for the prime purpose of investigating the state of the acoustic delay line art and its possible application to the high speed intercept recorder problem. Those attending a technical discussion of the subject were:

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2. It was learned that fused quartz delay lines have been fabricated for delay times up to 5.5 milliseconds which appears sufficient for our purpose. [REDACTED] advised that a faithful reproduction of signals in our specified pulse widths of 150 microseconds to 2 milliseconds could be accomplished, the only factor limiting fidelity would be the transistorized amplifiers employed. Insertion losses of 20 to 30 db occur, but associated amplifiers could compensate so that the unit would offer unity gain. The fused quartz delay line described has a characteristic attenuation of spurious responses of from 30 to 50 db. Although the companies production AD-1 delay unit employs temperature control of the delay medium, the slight change in delay time with temperature would not affect our purpose. To quote the computations made by [REDACTED], a change of 40°C in the temperature of the medium would cause only a 1/4 microsecond change in delay time. As long as this variation occurs above the maximum delay time required by the recorder, and since the signals received are of short duration, compared to the delay time change with temperature, this control would not be needed.

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3. Further discussion with the Operational Division will be necessary prior to additional evaluation of the relative merits of the acoustic delay line vs. the magnetic memory devices. From existing operational information it would appear that the acoustic delay line would be more desirable.

4. The company volunteered that the cost to develop such an equipment would be about \$15,000.00 and might be accomplished in a period of six months.

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5. A list of government contracts awarded the company is attached. Descriptive literature on the company and personnel is also attached for information purposes. Key personnel of the company have existing military clearances, the Biographical Data Memorandum (new short Agency Security form) have been filled out and forwarded to the Security Staff, OL, for processing. The company personnel applying for clearance are as follows:

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President
Security Officer
Vice-president, Engineer
Contract Administrator
Staff Project Engineer

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OC-E/R&D-EP/RID:nmb (3 September 1957)

cc: R&D Subject File
Monthly Report (2)
R&D Lab
SPD
R&D Chrono
EP Chrono

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